

इंटरनेट

मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 8010-1 (1976): Guidelines for preparation of technical reports, Part 1: Research and development reports [MSD 5: Documentation and Information]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE



IS : 8010 (Part I) - 1976
(Reaffirmed 1992)

Indian Standard

**GUIDELINES FOR PREPARATION OF
TECHNICAL REPORTS**

PART I RESEARCH AND DEVELOPMENT REPORTS

(Third Reprint AUGUST 1998)

UDC 001.818:651.78

© Copyright 1976

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

GUIDELINES FOR PREPARATION OF TECHNICAL REPORTS

PART I RESEARCH AND DEVELOPMENT REPORTS

Publications and Graphic Technology Sectional Committee, EC 10

Chairman

SHRI S. N. GUHA RAY

Representing

Sree Saraswaty Press Limited, Calcutta

Members

SHRI ABUL HASAN

DR J. V. S. R. ANJANEYULU

National Book Development Board & Book Promotion and Copyright Clearance Cell (Ministry of Education & Social Welfare), New Delhi
Defence Scientific Information & Documentation Centre (Ministry of Defence), Delhi

SHRI G. S. SHARMA (*Alternate*)

SHRI N. J. ARDESHIR

SHRI K. R. BAHADUR

PROF A. K. BANERJI

SHRI R. H. BHANOT

Bolton Fine Art Litho Works, Bombay
Institute of Printing Technology, Allahabad
Banaras Hindu University, Varanasi
Directorate of Advertizing & Visual Publicity (Ministry of Information and Broadcasting), New Delhi

SHRI H. C. GANDHI (*Alternate I*)

SHRI K. C. KRISHNAN (*Alternate II*)

SHRI Y. R. CHADHA

Publications and Information Directorate (CSIR), New Delhi

SHRI R. N. SHARMA (*Alternate*)

SHRI V. N. CHHABRA

SHRI A. DAR

The Statesman Ltd, New Delhi
Printing & Stationery Department, Government of Uttar Pradesh, Allahabad
Indian Institute of Mass Communication, New Delhi

SHRI M. V. DESAI

PROF G. GOVINDAN (*Alternate*)

SHRI V. U. DONGERKERY

India Tourism Development Corporation Ltd, New Delhi

SHRI V. B. GHARPURE

SHRI V. S. KRISHNAMURTHY

SHRI K. MOHAN RAO (*Alternate*)

PROF P. N. MALHAN

Tata Press Limited, Bombay
Institute of Printing Technology, Madras

SHRI D. N. MALHOTRA

DR P. L. MALHOTRA

SHRI D. RAGHAVAN (*Alternate*)

In personal capacity (*The Retreat, B-1/42 Malviya Nagar, New Delhi*)
The Federation of Indian Publishers, New Delhi
University of Delhi, Delhi

(*Continued on page 2*)

© Copyright 1976

BUREAU OF INDIAN STANDARDS

This publication is protected under the *Indian Copyright Act* (XIV of 1957) and reproduction in whole or in part by any means except with written permission of the publisher shall be deemed to be an infringement of copyright under the said Act.

IS : 8010 (Part I) - 1976

(Continued from page 1)

<i>Members</i>	<i>Representing</i>
SHRI VISHVANATH MALHOTRA	All India Hindi Publishers Association, Varanasi
SHRI KRISHNACHANDER BERI (<i>Alternate</i>)	
SHRI D. R. MANKEKAR	Authors Guild of India, New Delhi
SHRI L. J. MENESSE	Directorate of Printing and Stationery, Government of Maharashtra, Pune
SHRI G. D. DHOND (<i>Alternate</i>)	
COL B. T. NAGRANI	The Institution of Engineers (India), Calcutta
SHRI B. R. SUBRAMANIAM (<i>Alternate</i>)	
SHRI JAIPAL NANGIA	National Council of Educational Research and Training, New Delhi
SHRI C. N. RAO (<i>Alternate</i>)	
SHRI T. N. NINAN	Chief Controller of Printing & Stationery (Ministry of Works & Housing), New Delhi
SHRI M. J. SINGH (<i>Alternate</i>)	
SHRI B. N. RAMA MURTHY	Office of the Director of Printing, Stationery & Publications (Government Press), Bangalore
SHRI B. V. REDDY	A. P. Government Text Book Press, Hyderabad
SHRI G. RAMAKRISHNA RAO (<i>Alternate</i>)	
SHRI SAMUEL ISRAEL	National Book Trust, India, New Delhi
SHRI U. K. MALLYA (<i>Alternate</i>)	
SHRI B. D. SEN	All India Federation of Master Printers, New Delhi
SHRI V. SETHURAM (<i>Alternate</i>)	
SHRI D. SEN	The Regional Institute of Printing Technology, Calcutta
SHRI P. SEN (<i>Alternate</i>)	
SHRI T. K. SENGUPTA	The Times of India, New Delhi
SHRI N. N. SETHI	Associated Artists, New Delhi
SHRI K. C. SETHURAMAN	Publications Division (Ministry of Information & Broadcasting), New Delhi
SHRI H. H. N. TANDON (<i>Alternate</i>)	
SHRI N. R. SUBRAMANIAN	Tata McGraw Hill Publishing Co Ltd, New Delhi
SHRI S. P. SWAMINATHAN	Government Press, Government of Tamil Nadu, Madras
SHRI G. BALAKRISHNAN (<i>Alternate</i>)	
SHRI P. V. THOMAS	Government Institute of Printing Technology, Bombay
SHRI RAM D. TANEJA, Director (Pub)	Director General, ISI (<i>Ex-officio Member</i>)
<i>Secretary</i>	
SHRI P. V. GOPALAKRISHNAN	
Deputy Director (Pub), ISI	

Panel for Preparation of Technical Reports, EC 10 : P1

<i>Convener</i>	
SHRI GEORGE THOMAS	Cement Research Institute of India, New Delhi
<i>Members</i>	
DR J. V. S. R. ANJANEYULU	Defence Scientific Information & Documentation Centre (Ministry of Defence), Delhi
SHRI G. S. SHARMA (<i>Alternate</i>)	

(Continued on page 12)

Indian Standard

GUIDELINES FOR PREPARATION OF TECHNICAL REPORTS

PART I RESEARCH AND DEVELOPMENT REPORTS

0. FOREWORD

0.1 This Indian Standard (Part I) was adopted by the Indian Standards Institution on 8 April 1976, after the draft finalized by the Publications and Graphic Technology Sectional Committee had been approved by the Executive Committee.

0.2 Research and development (R&D) reports have emerged as a distinctive form of technical literature brought out by various technical institutions and agencies. These reports contribute to the rapid and effective communication of information on specific topics. They introduce the results of research and development into the common fund of knowledge and permit their use as a basis for action. The effectiveness of R&D reports greatly depends on the clarity and completeness of their contents and on their presentation. At present there is no uniformity either in regard to the sequence of various elements of information in the reports or in the presentation of their content. Guidelines on these and other aspects of R&D reports will simplify their preparation and presentation and enhance their utility.

0.3 This standard will be published in several parts. This part covers research and development reports.

1. SCOPE

1.1 This standard (Part I) provides guidelines for the presentation and production aspects of research and development reports.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definition shall apply.

2.1 Research and Development Report — A document which states the results of, or progress made with, a research and development investigation.

3. SECTIONS OF RESEARCH AND DEVELOPMENT REPORT

3.1 The sections of a research and development report should preferably be arranged in the following order:

- a) *Front Cover*
- b) *Preliminary Pages*
 - 1) Title page,
 - 2) Summary,
 - 3) Foreword,
 - 4) Table of contents,
 - 5) Abbreviations*, and
 - 6) Signs and symbols*.
- c) *Body of the Report*
 - 1) Introduction,
 - 2) Theory,
 - 3) Experimental part,
 - 4) Discussion, and
 - 5) Conclusions and recommendations.
- d) *End Matter*
 - 1) Acknowledgement,
 - 2) References,
 - 3) Appendices,
 - 4) Tables,*
 - 5) Illustrations*,
 - 6) Graphs*,
 - 7) Bibliography, and
 - 8) Index.
- e) *Abstract Sheets with Key Words*
- f) *Back Cover*

3.2 This standard recommends the traditional practice of presenting conclusions and recommendations after experimental procedure, results and discussion. However, for reports intended especially for management, it is advantageous to place the conclusions and recommendations immediately after the introduction.

*If not included in the body of the report.

3.2.1 This alternative arrangement may be followed if the sponsoring organizations consider it more appropriate.

3.2.2 The normal features of a research and development report are as given in **3.1**, though not all of these items find a place in a research and development report always.

3.3 Front Cover — The front cover should give the following:

- a) Report number;
- b) Title and sub-title in full;
- c) Author's name;
- d) Corporate source, that is, the name of the organization responsible for the report, its monogram and acronym; and
- e) The year and month in which the completed document is approved for reproduction.

3.3.1 Typical examples of report numbers are given below:

Examples 1 and 2:

An alphanumeric designation established by the organization producing the report:

Cement Research Institute of India
Research Bulletin No. 2, 1974, appears as:
CRI-RB-2-74

Indian Space Research Organization — Vikram Sarabhai
Space Centre Technical Memorandum No. 155, 1975,
appears as:

ISRO-VSSC-TM-155.75

Example 3:

An alphanumeric designation established by the organization disseminating the report:

A report prepared in 1974 under contract to the Department of Science and Technology, designated Technical Report No. 154 by the Indian National Scientific Documentation Centre (INSDOC) appears as:

INSDOC-TR-154-74

Example 4:

An alphanumeric designation derived from the contract, grant or agreement number of the sponsoring body:

A report prepared in 1974 under contract to the Bhabha Atomic Research Centre, designated as a BARC Extra-Mural Research Progress Report under contract number 1743 appears as:

BARC-EMR-PR-1743-74

IS : 8010 (Part I) - 1976

3.3.1.1 The number of characters in the report number, including conventional signs and spaces shall be kept to a minimum and shall not exceed 32. This is to facilitate computer processing.

3.3.1.2 The report number shall be printed horizontally in the top right-hand corner of the front cover. It shall also be printed vertically at the top left-hand corner and vertically in the bottom right-hand corner and may be suitably coloured to facilitate identification (see Fig. 1 p 11).

3.4 Title-Page — The title-page shall include the following:

- a) Report number;
- b) Title and sub-title;
- c) Author's name;
- d) Approving authority, if any;
- e) Corporate source;
- f) Year and month of the report;
- g) Price, if any, and the sales point if different from the corporate source; and
- h) Security classification, if any.

3.4.1 Back of the Title-Page — Any special notices required by the sponsoring authority shall be given on the back of the title-page, for example, limitations on reproduction, security, legal information, safety precautions, and disposal instructions. Organizations issuing reports to which restrictions apply shall, if possible, indicate the period for which the restrictions remain in force.

3.4.2 Information given on both the front cover and the title-page shall appear, as far as possible, in similar positions.

3.4.3 The title should be concise and should indicate clearly the subject of the report.

3.4.4 The title of a progress report shall specify the period covered.

3.5 Summary — The summary should be an informative precis of the entire work. A concise description of the methods, results and significance of the work should be included. A mere expansion of the title should be avoided. The emphasis to be placed on various aspects will depend on the nature of the work being reported. Particular attention should be paid to the writing of the summary as it is one of the most important elements of the report.

3.5.1 The summary should normally appear on the page following the title-page.

3.6 Foreword — A foreword designed to define and emphasize the background of the study may be given on the page immediately following the summary page, and before the table of contents.

3.7 Table of Contents — The table of contents shall follow the foreword and shall begin on the succeeding page. The principal headings shall be listed verbatim and in the order in which they appear in the report with the page number on which each of them begins.

3.7.1 Where two or more parts of a multi-section report are produced simultaneously, the complete table of contents shall appear in the first part. The second and subsequent parts shall contain a table of contents specific to that particular volume.

3.7.2 Each section of a multi-section report shall contain a statement of the plan of the whole work and the intended total number of sections and scope of each, as well as a table of contents specific to that particular section. The final volume shall contain a complete contents list for the whole series. Where a multi-section report is produced in parts at intervals of time a full table of contents should be included as an addendum to the final volume.

3.8 Introduction — Every report shall have an introduction which should include in the first paragraph a succinct statement of the objective and the scope of the work reported. The introduction should relate the work described to the historical background with salient features in a concise manner. It should avoid a detailed discussion of the results as a repetition of the discussion section, nor should it be a sample repetition of the contents of the summary.

3.9 Theory — In certain cases, the report may be primarily of a theoretical rather than an experimental nature. In such cases, theory should be substituted for experimental procedure and results. Where results embrace a detailed theoretical treatise in addition to the experimental work, theory shall precede experimental procedure and results.

3.10 Experimental Part — This section concerns the manner in which the work was carried out and the results obtained. Emphasis should be given to anything new; only very brief details of standard apparatus and techniques should be presented. If it is desired to bring out experimental aspects in greater detail, these should be given in an appendix.

3.10.1 As a general guide, details should be just sufficient to enable an adequately skilled or knowledgeable worker in the field to retrace the steps of the investigation without undue difficulty.

3.10.2 Normally the experimental section will embrace a number of subsections for clear presentation of the subject matter.

3.10.3 The results should form the ultimate subsections.

3.11 Discussion — The discussion is the interpretation of, and/or commentary on, the results and the reasoning on which the conclusions are founded. It may also attempt to shed light on the work in terms of new or extended principles or theories in the field covered. A separate section should be formed wherever it is practicable even though it may be difficult to separate discussion from the preceding experimental procedure and results.

3.12 Conclusions and Recommendations — Conclusions and recommendations should be clear and precise.

3.12.1 Conclusions represent a clear and orderly presentation of the deductions made after full consideration of the results of the work. Quantitative data are not inappropriate but the details of an involved argument or result should not be included.

3.12.2 Recommendations are concise statements of further action considered necessary as a result of the conclusions reached. They arise directly from the conclusions and should be fully justified by the work covered in the report.

3.13 Acknowledgements — Acknowledgements of help given in carrying out the reported work or in preparing the report should be made in a section succeeding the discussion.

3.14 References — References shall be provided for works mentioned in the text and shall be listed and numbered in the order in which they first appear in the text. The bibliographical form shall conform to IS : 2381-1963*. Where an original source is quoted from an intermediary source, both shall be cited, with the intermediary preceded by the words 'Quoted in'. To avoid ambiguity, it is recommended that titles of periodicals should be abbreviated in accordance with IS : 18-1970†.

3.15 Appendices — Appendices give detailed explanations of methods and techniques summarized in the main text together with supplementary matter which it would not be appropriate to include in the main body of the report.

3.16 Tables and Illustrations — Tables and illustrations should preferably appear at the appropriate places in the body of the text, but where space considerations or reprographic techniques preclude this, they may be put together to form an appendix. Tables shall conform to the recommendations given in IS : 4731-1968‡ and IS : 6660-1972§.

*Recommendations for bibliographical reference.

†Guide for abbreviations of words in titles of periodicals using Roman alphabet (*first revision*).

‡Guide for preparation of manuscript of an article in a learned periodical.

§Guide for illustrations in books.

3.17 Bibliography — This is a list of references in addition to those cited in the text of the report. If Included, the bibliography should indicate whether it is comprehensive or selective.

3.18 Abbreviations — If a list of abbreviations is included it shall be at the position indicated in 3.1 (b). The list should contain only those abbreviations which are not in common usage. At the first instance of their use in the text, abbreviations, especially acronyms, should be accompanied by an explanation of their meaning.

3.19 Signs and Symbols — Signs and symbols used in the report should comply with the relevant Indian Standards on the subjects or other generally accepted systems of nomenclature. A list of these should be given along with the units of measurement, arranged in alphabetical order at the position indicated in 3.1(b). Greek symbols should be arranged separately.

3.20 Index — A lengthy report should have an index complying with IS : 1275-1976*.

3.21 Abstract — The abstract of the report shall follow the index. It should preferably be given on a separate perforated sheet and shall conform to IS : 795-1976†.

3.22 Back Cover — The back cover should not contain any material necessary to the understanding of the report.

4. PAGINATION AND NUMBERING

4.1 Page Number — Pages shall be numbered in international form of numerals consecutively throughout the report. If sheets are printed on both sides, blank pages shall be avoided wherever possible, but if they occur they shall be counted in the page numbering.

4.2 Section Number — Sections shall be numbered throughout the main body of the text and appendices. The numbering of sections in appendices shall not repeat that of the main text. International form of numerals shall be used for section numbering. If necessary, the alphabet or Roman numerals may be used for appendices.

4.3 Reference Number — Identification numbers, letters or marks for literature reference shall be printed as superscripts or, if on the line, in parentheses (round brackets) immediately following the relevant word or phrase in the text. Different sequences shall be used for foot-notes and bibliographical references, for example, letters or marks for foot-notes and numbers for bibliographical references.

*Rules for making alphabetical indexes (first revision).

†Guide for preparation of abstracts (first revision).

4.4 Other Material— Tables, illustrations, drawings and graphs shall be numbered in international form of numerals.

5. PRODUCTION

5.1 Type— Typefaces, interword spacing and the line spacing shall be so chosen as to facilitate reading.

5.2 Non textual Matter— General engineering drawings shall conform to the requirements of IS : 696-1972* and architectural and building drawings to IS : 962-1967†.

5.3 Sizes— The page and cover shall be in A4 (210 × 297 mm) or A5 (148 × 210 mm) as may be convenient.

5.4 Margins— The margins for printed reports of A4 and A5 sizes are given in Table 1.

TABLE 1 RECOMMENDED MARGINS FOR TECHNICAL REPORTS

Sl. No.	POSITION	MINIMUM MARGINS	
		A4 Size	A5 Size
(1)	(2)	(3)	(4)
i)	Back	25 mm (6 ems)	15 mm (3½ ems)
ii)	Head	29 „ (7 „)	19 „ (4½ „)
iii)	Fore-edge	34 „ (8 „)	23 „ (5½ „)
iv)	Tail	38 „ (9 „)	27 „ (6½ „)

NOTE 1 — In the case of A4 size, if the report is centre-stitched or section-sewn the margin as recommended may be given. If it is side-stitched then the back margin should be increased by 5 mm.

NOTE 2 — In the case of A5 size report, the margins exclude document number and page number.

5.5 Columns— For printed reports in A5 size, text is usually presented in a single column. The left-hand margin shall be aligned. The right-hand margin, if unjustified, shall not display excessive differences of line length in continuous text, normally ± 5 percent of the notional line length. For printed reports in A4 size, two columns may be used if it is necessary to present a substantial amount of material.

5.6 Covers— Cover papers should be of sufficient strength to protect the contents for a reasonable period.

5.7 Binding— Any style of binding, giving a substantial or permanent anchorage down the left-hand side of the report is acceptable, provided it allows the text of the report to lie reasonably flat without damage to the spine.

*Code of practice for general engineering drawings (second revision).

†Code of practice for architectural and building drawings (first revision).

GUIDANCE TECHNIQUES FOR RE-ENTRY OF VEHICLES

By
K. VENKATACHALAM
CONTROL, GUIDANCE & INSTRUMENTATION
DIVISION

DECEMBER 1975

VIKRAM SARABHAI SPACE CENTRE
INDIAN SPACE RESEARCH ORGANIZATION

**FIG. 1 LAYOUT OF FRONT COVER OF A RESEARCH AND
DEVELOPMENT REPORT**

IS:8010 · (Part I) - 1976

(Continued from page 2)

Members

SHRI Y. R. CHADHA

SHRI R. N. SHARMA (*Alternate*)

SHRI R. L. QAZI

DR V. SIDDHARTHA

DR R. K. SRIVASTAVA

SHRI B. GARUDADWAJAN (*Alternate*)

Representing

Publications and Information Directorate (CSIR),
New Delhi

Central Board of Irrigation and Power, New Delhi

Indian Space Research Organization, Bangalore

Indian Institute of Petroleum (CSIR), Dehra Dun

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones: 323 0131, 323 3375, 323 9402

Fax : 91 11 3234062, 91 11 3239399, 91 11 3239382

Telegrams : Manaksanstha
(Common to all Offices)

Central Laboratory:

Plot No. 20/9, Site IV, Sahibabad Industrial Area, Sahibabad 201010

Telephone

8-77 0032

Regional Offices:

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002 323 76 17

*Eastern : 1/14 CIT Scheme VII M, V.I.P. Road, Maniktola, CALCUTTA 700054 337 86 62

Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160022 60 38 43

Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600113 235 23 15

† Western : Manakalaya, E9, Behind Marol Telephone Exchange, Andheri (East),
MUMBAI 400093 832 92 95

Branch Offices:

'Pushpak', Nurmohamed Shaikh Marg, Khanpur, AHMEDABAD 380001 550 13 48

‡ Peenya Industrial Area, 1st Stage, Bangalore-Tumkur Road,
BANGALORE 560058 839 49 55

Gangotri Complex, 5th Floor, Bhadbhada Road, T.T. Nagar, BHOPAL 462003 55 40 21

Plot No. 62-63, Unit VI, Ganga Nagar, BHUBANESHWAR 751001 40 36 27

Kalaikathir Buildings, 670 Avinashi Road, COIMBATORE 641037 21 01 41

Plot No. 43, Sector 16 A, Mathura Road, FARIDABAD 121001 8-28 88 01

Savitri Complex, 116 G.T. Road, GHAZIABAD 201001 8-71 19 96

53/5 Ward No. 29, R.G. Barua Road, 5th By-lane, GUWAHATI 781003 54 11 37

5-8-56C, L.N. Gupta Marg, Nampally Station Road, HYDERABAD 500001 20 10 83

E-52, Chitaranjan Marg, C-Scheme, JAIPUR 302001 37 29 25

117/418 B, Sarvodaya Nagar, KANPUR 208005 21 68 76

Seth Bhawan, 2nd Floor, Behind Leela Cinema, Naval Kishore Road,
LUCKNOW 226001 23 89 23

NIT Building, Second Floor, Gokulpat Market, NAGPUR 440010 52 51 71

Patliputra Industrial Estate, PATNA 800013 26 23 05

Institution of Engineers (India) Building 1332 Shivaji Nagar, PUNE 411005 32 36 35

T.C. No. 14/1421, University P.O. Palayam, THIRUVANANTHAPURAM 695034 6 21 17

*Sales Office is at 5 Chowringhee Approach, P.O. Princep Street,
CALCUTTA 700072 27 10 85

† Sales Office is at Novelty Chambers, Grant Road, MUMBAI 400007 309 65 28

‡ Sales Office is at 'F' Block, Unity Building, Narashimaraja Square,
BANGALORE 560002 222 39 71